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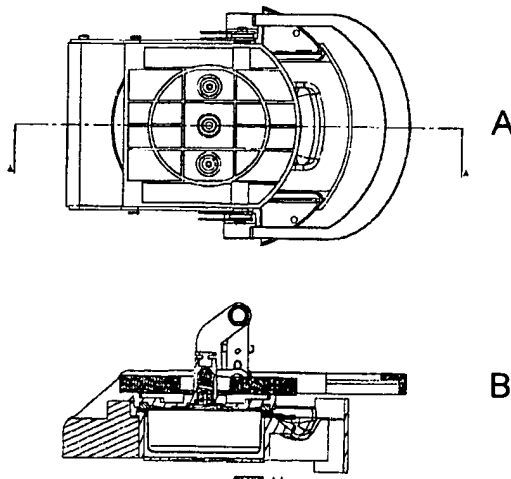
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(54) Title: CABINET DESIGN OF FILTER HOLDER FOR PRESSURIZED ESPRESSO MACHINES



(57) Abstract: This invention provides a brewing head unit of a coffee machine for easily inserting or removing the filter (15) and locking the filter and the filter holder (17) into the brewing head of a coffee machine to form a water-and pressure tight connection. The filter and the filter holder can be inserted into the coffee machine of the present invention visually. This invention also provides a cabinet filter holder which can be inserted or placed into the brewing head assembly or unit of a coffee machine by sliding the filter holder into the brewing head unit from the front, to or side or by swinging the filter holder, which is movable attached to the brewing head assembly or unit on a pivot, into the coffee machine. This invention further provides a brewing head assembly or unit, wherein the locking mechanism (13, 20) for placing or orienting the filter holder and securing the filter holder to the brewing head assembly or unit is motor-driven. This invention further provides a cabinet filter design wherein the boiler (19) or heating system is separated from the brewing head assembly or unit.

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CABINET DESIGN OF FILTER HOLDER FOR PRESSURIZED ESPRESSO MACHINES

This invention claims priority of U.S. Serial No. 10/745,440, Filed December 23, 2003 and European Patent Application No. 03029686.7, Filed December 23, 2003, the contents of which are incorporated herein in their entireties by reference into this application.

Throughout this application, various publications are referenced. Disclosures of these publications in their entireties are hereby incorporated by reference into this application to more fully describe the state of the art to which this invention pertains.

FIELD OF THE INVENTION

The present invention relates to the design of a brewing head unit of a coffee machine comprising locking means for detachable attachment of a cabinet- or drawer-like filter holder to the brewing head unit of the coffee machine.

BACKGROUND OF THE INVENTION

The locking mechanisms employed or used by most existing pump espresso or steam espresso machines are not very user friendly. It is very cumbersome for the user to locate and to attach the filter holder unit onto the locking mechanism on the brewing head unit of a coffee machine effortlessly. As a general trend, the filter holder units which have so far been in common use for espresso machines have a brewing tray which is provided with a radially projecting handle and has inserted into a pot-shaped filter insert. For example, see U.S. Pat. No. 5,913,962. With such design, the user would need to put the coffee ground into the stainless steel filter then place or insert the filter into the filter holder. Next, the user would need to find the fitting slot(s) on the brewing head unit, attach the filter unit to the brewing head unit, and turn the filter unit to lock the filter unit onto the brewing head unit. Frequently, the user spends a lot

of time attempting to locate the locking position on the brewing head unit.

Moreover, traditional pump espresso or steam espresso machine uses either a boiler or a thermal block heating system which is mounted on top of the brewing head or shower and locking mechanism. With this design, the hot water from the heating system would flow directly to the filter.

The drawbacks relating to mounting the boiler or the thermal block heating system on or above the brewing head unit include design limitations on placement of the locking mechanism. Other limitations or drawbacks of the placing the heating system on top of the brewing head unit include:

1. The weight of the heating system on the top will increase the force required to open the brewing head, which is not user friendly.

2. When the heating system is fixed on top of the brewing head unit, it creates a constraint on the design of the locking mechanism. In the present invention, the filter holder (movable part) is placed on the bottom or is separated from the brewing head assembly or unit. Also, in the present invention, the movable part of the locking assembly is on the top and the fixed part is located on the bottom, so the user can slide in or swing-in the filter holder unit into the brewing head unit visually.

The present invention relates to a simpler mechanism for locking the filter holder comprising pivotable upper brewing head section and a lower brewing head section fixedly attached to the brewing head assembly or unit. The said lower brewing head section comprises a housing which can be adapted to receive various types filter holders and/or capsules.

The present invention further relates to the design of a brewing head

unit of a coffee machine which has a cabinet filter holder and a boiler or heating system which is not placed on the top of the brew head unit. Another aspect of the invention, the boiler or the heating system as described above is separated from the brewing head unit. In a further
5 aspect of the invention, the boiler or the heating system can be placed side by side with the brewing head locking mechanism.

The boiler and brew head of the invention are operatively connected by Teflon or other suitable hose. The primary advantage of having
10 a boiler or heating system which is separate from the brewing heat unit is that the brew head unit does not have to carry the weight of the boiler so that the design of the locking mechanism is more flexible, versatile and/or dynamic.

Essegielle S.r.l, et al., European Patent Application No. 97118294.4, Filed October 21, 1997 relates to a device wherein the coffee pan is attached to a boiler located above the coffee pan by inserting the coffee pan along a sliding guide and rotating the coffee pan. However, the Essegielle, et al. device still requires the boiler to
20 be place on top of the brew head. Essegielle, et al discloses a two step process for placing or inserting and locking the coffee pan. Essegielle, et al further discloses a coffee pan which slides into the annular body and a handle which is turned with the annular body to lock the coffee pan to the boiler. The present invention only requires
25 the detachable cabinet filter holder to be placed in the coffee machine. A handle is rotated downward to lock the brewing head to form a water-and-pressure-tight seal. Moreover, in the present invention, the boiler is not placed on the top of the brew head.

It is another object of the present invention to take away from the user all the hassles of inserting the filter holder into the brewing head unit. The present invention relates to a new design which uses
30 easy to fit cabinet design to act as the filter holder. The user has a very simple task to perform, namely to fit the filter into the filter
35 holder visually. There is no longer any need for the user to search